"6. There is no evidence of gynogenesis or any other form of parthenogenesis.

"7. Two polar bodies are extruded in eggs of virgins, the first normally loses connection with the vitellus and by the time of the first cleavage has migrated 50–200 micra into the albumen; the second polocyte remains attached to the vitellus, but its chromatin does not return to the egg nucleus.

"8. Ten chromosomes comprise the haploid number as is shown by the first and second maturation divisions and by the number of karyomeres in the mature egg.

"9. Typical male and female pronuclei are formed, and fuse in virgin eggs to form the first cleavage nucleus."—H. A. P.

A Pleistocene Fossil Locality on Big Hope Island, Puget Sound. By Junius Henderson (Univ. of Colo. Studies, XVI, No. 1, June, 1927). Contains marine mollusks. See p. 77.

New West American Marine Mollusks. By Paul Bartsch. Proc. U. S. Nat. Mus., Vol. 70, 1927, Art. 11. Species of *Astyris, Opalia, Melanella, Aclis, Turbonilla,* etc. The most interesting form, perhaps, is *Melanella portlandica* from Portland, Oregon, the first of its genus and family reported from an inland locality, far beyond marine influence.

H. A. P.

A Monograph of Australian Loricates [Chitons].—By Tom Iredale and A. F. Basset Hull. 1927. 168 pp., 21 plates.[1] Originally published in parts in the Australian Zoologist, 1923-1927, this monograph has now been issued in a single handsome volume. 161 species and 32 subspecies now known in this fauna are illustrated on eighteen plates crowded with figures. These are among the best chiton illustrations published, and highly creditable to the three artists who produced them.

[1] Royal Zoological Society of New South Wales. Sydnev. Price 5 *s*. For notice of early parts of this work see Nautilus XXXIX, 35.

The coasts of extra-tropical Australia are perhaps the richest in the world for these mollusks. The wide range of families and genera represented have given the authors opportunity to make important contributions to the taxonomy of the group. Most of the large old genera are broken up. Thus, *Ischnochiton*, which formerly would have covered 40 Australian species, is now divided into some nine genera. Possibly not so many full genera were needed; yet I believe that anyone who will go over the list with some knowledge of the species cannot fail to see the advantage of several genera standing for definite groups of evidently common ancestry over the comprehensive *Ischnochiton* of former days, in which there was the greatest diversity of shape, sculpture and girdle covering. Likewise, the complex group of Acanthochitons seems easier to grasp as now divided.[2]

It is not possible to take space here to enumerate the new genera and species, the changes in former nomenclature, etc.; and moreover those interested in these details will obtain the work for themselves.

A Permo-Carboniferons species from Bundanoon, N. S. W., is described as *Permochiton australianus*. Its systematic position could not be determined. An analysis of the Tertiary Australian species leads to the conclusion that "the most specialized of our living loricates were fully developed as early as the Balcombian [Oligocene], and at that stage no primitive forms persisted".

An interesting feature of the work is the biographical appendix, containing sketches and portraits of those concerned in the collection and description of Australian loricates from the early voyages to the present time. The personal glimpses of Australian naturalists of the past generation are especially welcome to those of us who knew them only as names. It is no less a pleasure to meet again

[2] The name *Glyptelasma* Iredale and Hull, 1925, type *Acanthochites matthewsi* Pils., is preoccupied by *Glyptelasma* Pilsbry, U. S. Nat. Mus. Bull. 60, 1907, pp. 83, 87. I do not like to filch plums out of Iredale and Basset Hull's pie, but I am allowing myself the pleasure of renaming this beautiful Acanthochitid group BASSETHULLIA.

in these pages the chiton collectors of today, some of whom guided me a few years ago to their choicest collecting grounds.

Only collectors and students of chitons can appreciate the amount of strenuous collecting and patient study involved in the production of such a monograph as this. Australian naturalists have now a better guide for further work on this group than is available in any other country.—H. A. P.

THE MARINE SHELLS OF THE WEST COAST OF NORTH AMERICA.—By Ida Shepard Oldroyd, Stanford University Publications. Vol. I of this work was noticed in our issue of January, 1926. Vol. II, Parts 1, 2 and 3 have been issued during 1927, containing 940 pages, 108 plates, completing the work. As in the volume treating of bivalves, the original descriptions are reprinted or translated, and usually the original figures are reproduced. The classification and nomenclature is that of Dall's catalogue. The great value of this compilation of scattered material to students and collectors will be apparent; it was a huge task, testifying to the tireless industry of the author. It would, of course, have been still more useful if all of the species available had been figured. Thus, in the series of families from Caecidae to Litiopidae, out of 80 species only two are figured; none of the chitons are illustrated.

A useful feature is the location of type specimens. This information is often very hard to trace, and it is natural that some mistakes occur, as in the case of *Thais lamellosa* (*Gmelin*), said to be in the National Museum.

These volumes will doubtless become the constant companions of West Coast collectors. We congratulate the author on the completion of so useful a manual.

NOTES AND NEWS

SINISTRAL CAMPELOMA (correspondence).—Here's our latest "thrill"! I cleaned two Campelomas, the "left